

Specific hazards	No data
Protection of fire-fighters	Wear suitable protective equipment.
Specific methods	None.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Not applicable.
Environmental precautions	Not applicable.
Methods and materials for containment and cleaning up	Not applicable.

7. Handling and storage

Handling

Technical measures (e.g. Local and general ventilation)	No special precautions are necessary beyond normal good hygiene practices. See Section 8 of the SDS for additional personal protection advice when handling this product.
Safe handling advice	Not applicable.
Hygiene measures	Wash hands after handling.

Storage

Safe storage conditions	Store in a cool, dry place out of direct sunlight. Keep out of the reach of children.
Safe packaging materials	Not applicable.

8. Exposure controls/personal protection

Control parameters	Not available.
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Occupational exposure limits

Japan. OELs - JSOH (Japan Society of Occupational Health) Recommendation of Occupational Exposure Limits

Components	Type	Value	Form
Carbon black (CAS 1333-86-4)	TWA	4 mg/m ³	Total dust.
		1 mg/m ³	Respirable dust.

US. ACGIH Threshold Limit Values (TLV)

Components	Type	Value	Form
Carbon black (CAS 1333-86-4)	TWA	3 mg/m ³	Inhalable fraction.
paraffin wax (CAS 8002-74-2)	TWA	2 mg/m ³	Fume.

Engineering measures	Not normally needed.
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Personal protective equipment

Respiratory protection	Not normally needed.
Hand protection	If necessary, Wear protective gloves.
Eye protection	Not normally needed.
Skin and body protection	Not normally needed.

9. Physical and chemical properties

Physical state	Solid.
Form	Ribbon
Color	Black.
Odor	No odor
Melting point/freezing point	≥482 °F (≥250 °C) (base film)
Boiling point, initial boiling point, and boiling range	No data
Combustibility	Not applicable.
Lower and upper explosion limit / flammability limit	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Flash point	No data
Auto-ignition temperature	≥752 °F (≥400 °C) (base film)
Decomposition temperature	No data
pH	Not applicable

Kinematic viscosity	Not applicable
Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water) (log value)	No data
Vapor pressure	No data
Density and/or relative density	
Density	Approx.1.4(base film)
Relative density	No data
Vapor density	Not applicable
Particle characteristics	Not available.
Other information	
Evaporation rate	No data
Explosive limit	Not applicable
Explosive properties	Not applicable.
Flammability	Combustion if an ignition source is present.

10. Stability and reactivity

Reactivity	Not applicable.
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	None under normal conditions.
Incompatible materials	None.
Hazardous decomposition products	No dangerous reaction known under conditions of normal use.

11. Toxicological information

Acute toxicity	Not available.
Respiratory or skin sensitization	
Respiratory sensitization	Not available.
Skin sensitization	Not available.
Germ cell mutagenicity	Not available.
Carcinogenicity	Carbon black contained in this product is classified to Group 2B of IARC as the result of inhalation test in use of rat. This is due to the fact that rat alone showed lung tumor in the animal experiment under very high concentration. During a normal use of this product, design of the cartridge proves it impossible to have powder carbon black released to the air. Intake from the mouth and skin does not show carcinogenicity.

IARC Monographs. Overall Evaluation of Carcinogenicity

Carbon black (CAS 1333-86-4)

2B Possibly carcinogenic to humans.

Reproductive toxicity	Not available.
Specific target organ toxicity - single exposure	Not available.
Specific target organ toxicity - repeated exposure	Not available.
Aspiration hazard	Not available.

12. Ecological information

Ecotoxicity	Not available.
Persistence and degradability	Not available.
Bioaccumulation	Not available.
Mobility in soil	Not available.
Hazardous to the ozone layer	Not available.

13. Disposal considerations

Local disposal regulations	Dispose of contents/container in accordance with local/regional/national/international regulations.
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14. Transport information

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

Special safety measures on transport and transportation means Not applicable.

15. Regulatory information

Industrial Safety and Health Act

Notifiable substances

Carbonblack

Table 9 Ordinance No. 130 5.0 %

Solid paraffin

Table 9 Ordinance No. 170 5.0 %

Labeling substances

Not regulated.

SDS and Risk Assessment

Carbonblack

Solid paraffin

Poisonous and Deleterious Substances Control Act

Specified poisonous substances

Not regulated.

Poisonous substances

Not regulated.

Deleterious substances

Not regulated.

Act on the Regulation of Manufacture and Evaluation of Chemical Substances

Class I specified chemical substances

Not regulated.

Class II specified chemical substances

Not regulated.

Monitoring chemical substances

Not regulated.

Priority Assessment Chemical Substances (PACs)

Not regulated.

Reporting Exempted Substances

Not regulated.

Law concerning Pollutant Release and Transfer Register

Specified class 1 substances (substance name, control number and content)

Not regulated.

Class 1 substances (substance name, control number and content)

Not regulated.

Class 2 substances (substance name, control number and content)

Not regulated.

Fire Service Act

Designated combustible material (Synthetic resins, others)

Ship Safety Law, Dangerous Goods Marine Transport and Storage Rule

Not regulated.

Air Law, Enforcement Rule

Not regulated.

Explosives Control Act

Not regulated.

16. Other information

Bibliography

ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

HSDB® - Hazardous Substances Data Bank

Japan Society for Occupational Health, Recommendation of Occupational Exposure Limits

JIS Z 7252:2019 Classification of chemicals based on "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)"

JIS Z 7253:2019 Hazard communication of chemicals based on GHS - Labelling and Safety Data Sheet (SDS)

Taiwan. OELs. (Standards on Workplace Atmosphere of Dangerous and Hazardous Materials)

Korea. Toxic Release Inventory (TRI) Chemicals (TCCL Article 14)

US. IARC Monographs on Occupational Exposures to Chemical Agents